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THE
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☞See advertisement on last page.

Poetry.

LABOR.

BY OWEN G. WARREN.

It was no curse that said to Man,
"Labor thy lot shall be;
And with the sweat upon thy brow
Thy hand shall nourish thee."
All who obey this high behest
Blessings in it have found;
And health and wealth are gathered best
By those who till the ground.

The human frame is scarcely made
Till toil develop form;
And health which is not won by work
Will hardly bide the storm.
Or hand or brain, with plough or pen,
May do God's will below;
But sloth will wither hand and brain,
And quench the spirit's glow.

Say not, thou lordly son of gold,
No need for *thee* to toil;
Say not there's nought to do, except
By serfs wed to the soil.
Are there not widowed hearts to cheer,
That pine in cold neglect;
And innocence to guide and guard,
And orphans to protect?

Are there not godlike intellects
Now crushed in slavish fear,
Thy hand, thy voice, thy pen could raise
To state of angels here?
Are there not shackled limbs to free—
Wild passions to reclaim—
Wild deserts and their wilder men
Than wildest beasts to tame?

A jarring and discordant world
To harmonize and bind
Together firm with iron bands,
'Till all be of one mind?
Are there not fiends in human shape,
That, from the throne of Power,
Watch, aye, lest widowed Liberty
Reclaim her long lost dower?

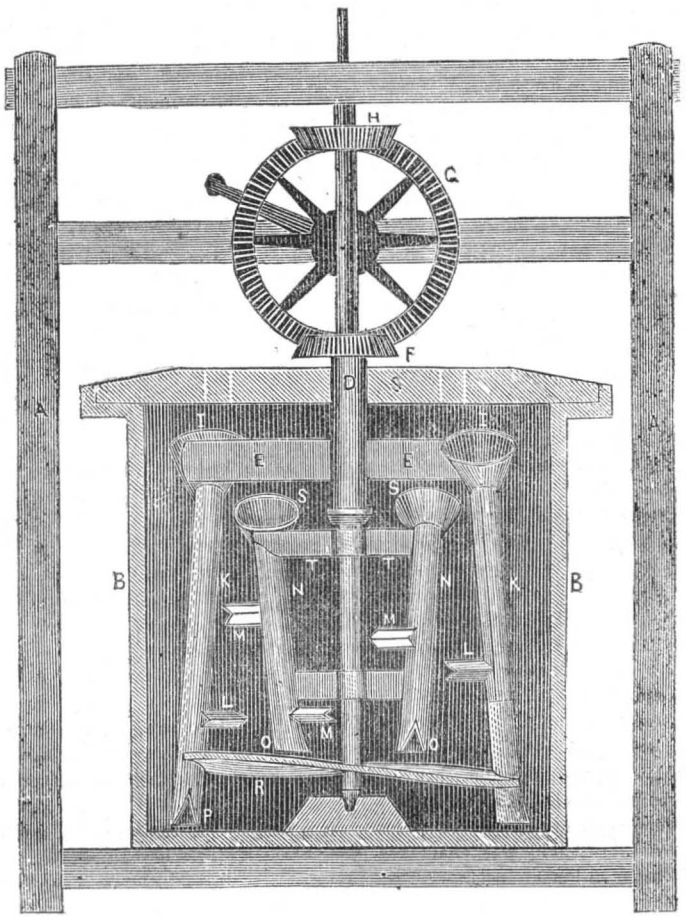
Is not the task yet to be done
To banish Crime from earth,
By guiding and directing right,
Man from his very birth—
To scatter Art and Science wide,
And thus prepare the way
For that Millennium to come,
When Love and Truth shall sway?

Is there not haggard, starving Want,
That feeds itself with Crime;
And dread Miasm in foul abodes
That kills men ere their time?
Are there not wrongs that every day
The rich heap on the poor;
Who toil and starve that heartless men
May swell their golden store?

Then say not, there is nought to do—
Labor—'tis Heaven's command,
Each in his sphere, and soon there were
No sorrow in the land.
Without that toil none can be great—
Without it none is good,
Or ever blameless and forgiven
Before their Maker stood.

COMPOUND ATMOSPHERIC CHURN.

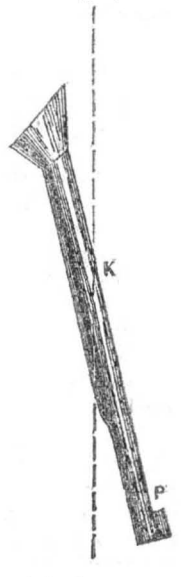
Figure 1.



This is a very simple and good invention of a Churn, invented by Alvah Graves and L. M. Whitman, and is now the property of Mr. S. G. Wise, of Weedsport, Cayuga Co. N. Y. and if butter is wanted to be made *in a hurry*, this is just the Churn that can do it.

Fig. 1 is an elevated section, exhibiting the interior arrangement and the other figure is a section part, to render the description more plain, the same letters of reference indicating the parts that are alike. A, is the frame in which the churn is placed, being simply any kind of bed plate, with two uprights and a cross beam for the driving shaft to revolve in a proper journal box. B B, is the churn—or rather the case or vessel for holding the milk or cream to be churned. It is of a circular form and may be made of wood or tin. It will

Fig. 2.



be proper to explain the nature of this invention—so that the parts of the interior will be easier understood when we refer to them by letters. The nature of it consists in having two revolving sets of hollow arms on one shaft in the inside of the churn, revolving contrary to one another, and conveying air from the upper part of the churn to the bottom and middle of the cream to be churned, through the arms as they revolve. The vertical shaft passes down through the middle of the churn and revolves in bearings, one in the bottom and the other in the cross beam at the top. On this shaft are permanently fixed the small inside revolving set of arms N N. These arms are hollow tubes having cowl or funnel shaped tops S S. O O, are the bottom openings with angular vertical slits. M M, are bevelled paddles on the arms, and T T, is a cross piece (one at top and one at bottom) which unites the two arms together. When the main shaft revolves these arms revolve along with it. K K, are another set of hollow arms formed exactly like the small inside set. I I, are the cowls or funnel mouths. P P, the angular bottom openings, and L L, the bevelled paddles. These large hollow arms are formed as represented in the section view.—They are not attached to the vertical shaft but to a collar D, through which the vertical shaft passes. E E, is the top piece which unites I I to the collar, and R is the bottom strap for the same purpose, only the bottom piece is formed like the flukes of a propeller. G. is a large bevel wheel to be driven by a crank by hand, or by band and pulley for a large dairy. H, is a bevel pinion on the vertical shaft, and F a bevel pinion fixed on or forming part of the collar D. The collar, it will be observed, rests and revolves on the top of a friction block which is fixed on the vertical shaft, and R has an opening in the middle so as to allow it to revolve loose around the shaft.

Operation.—When the wheel G is set in motion, it will be observed that H and F, will revolve horizontally in a contrary direction, therefore the arms will revolve in a contrary direction to one another, and certainly there could be no better mechanical arrangement to agitate the cream, while in connexion with the mechanical agitation, the air is, as it were gathered into the funnels and by its elastic nature, whirled round in the form of a screw continually downwards while the arms are revolving, and forced out at the lower openings among the cream, thus combining a thorough mechanical and atmospherical agitation of the milk or cream to separate the butter from the other ingredients of which the milk is composed.

RAIL ROAD NEWS.

A Good Arrangement.

The Utica and Schenectady and the Mohawk and Hudson Railroad Companies have made arrangements whereby one sett of officers and engineers, &c. with the locomotives and cars shall run the whole route. This will effect a saving and is a good arrangement. Other continuous lines throughout the country would do well to take the hint.

It is reported that a new company has been organized under the General Railroad Act, for the purpose of building a direct road from Syracuse to Rochester. Two routes have been surveyed, one known as the Canal route, and the other as the Bridge route. Both are favorable, and that line will be adopted, upon which the company is treated with the most liberality.

To Railroad Proprietors.

The Philadelphia Ledger publishes the following notice:—

As the use of wood on Railroads is very expensive, and subject to great disadvantages in regard to its conveyance from place to place, and the frequent attention which it requires, the use of coal would be a great advantage, and an immense saving. Therefore, after long consideration of this subject, I have found that by suspending the furnace on single or double suspenders, the jarring or shaking of the locomotive would be effectually precluded. And thus coal might be used with as much facility as it is now used in common house stoves. H. E. Mahn.

Rome and Oswego Plank Road.

We learn from the Rome Sentinel, that the Directors of the Rome and Oswego Plank Road have declared a semi-annual dividend of 6 per cent. for the last six months. About one third of the tolls have been invested as a sinking fund, thus making the earnings of the road during the half year, about 9 per cent on its capital. The cost of the road was about $85,000.

A Misdirected Tunnel.

The London Builder states that in a railway tunnel in the course of construction near Huddersfield, which had been bored at each end, thinking that the excavators would meet in the centre, it has been discovered that through defective engineering the two sets of workmen were passing each other, having got six yards asunder, instead of meeting face to face. The tunnel will be about seven-eights of a mile in length, and while it should have consisted of a gentle curve, it now takes the shape of a dog's hind leg!

They were probably led astray by deflection of the magnet.

Spontaneous Combustion.

At the City Gas Works at Philadelphia, vaults had been constructed for the bituminous coal used in making the gas and into which the coal was packed very close for the saving of room. A few weeks since spontaneous combustion was observed in these vaults but it was put out (supposed) with but little trouble. Last Saturday week, however, the fire burst out again and was not subdued without a great loss of coal, after several hours of unremitting toil by the City Fire Department.

If equal quantities of laudanum, tincture of rhubarb and tincture of camphor are mixed together, and eighteen drops mixed with water be taken every two hours, it is said to be the best antidote to cholera ever discovered.

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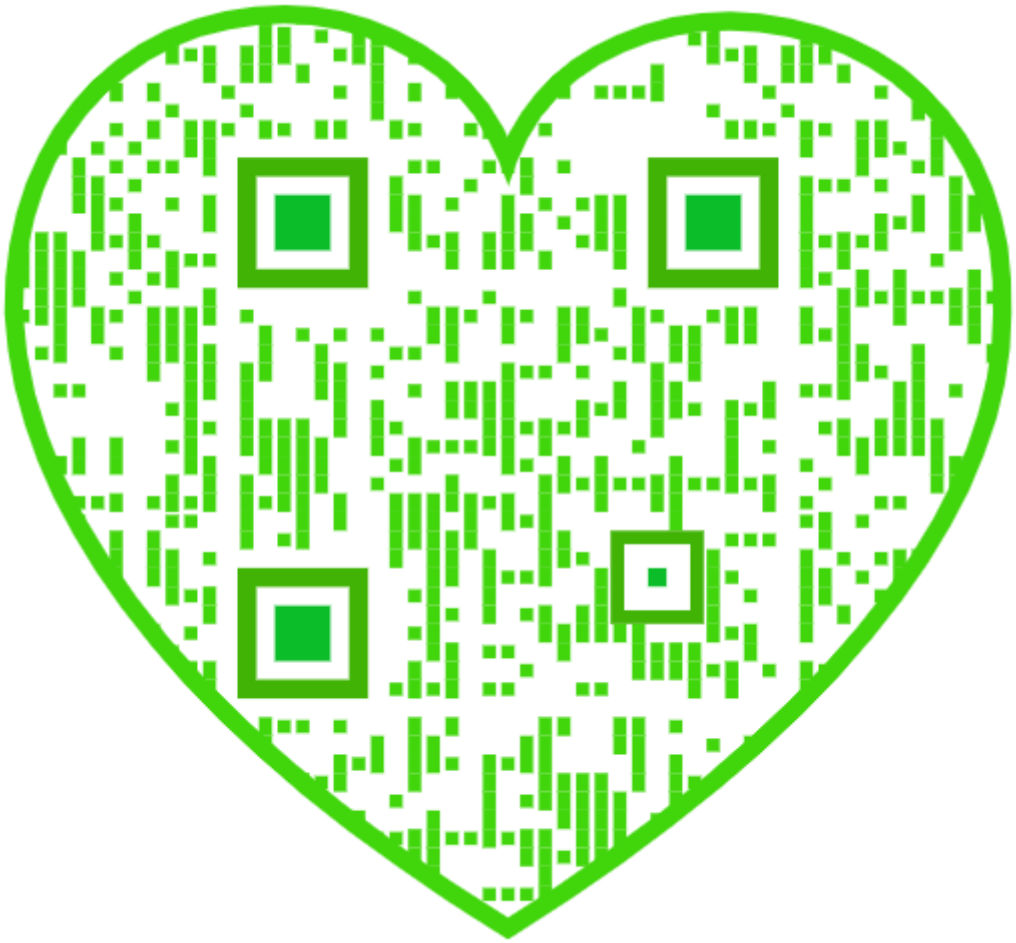

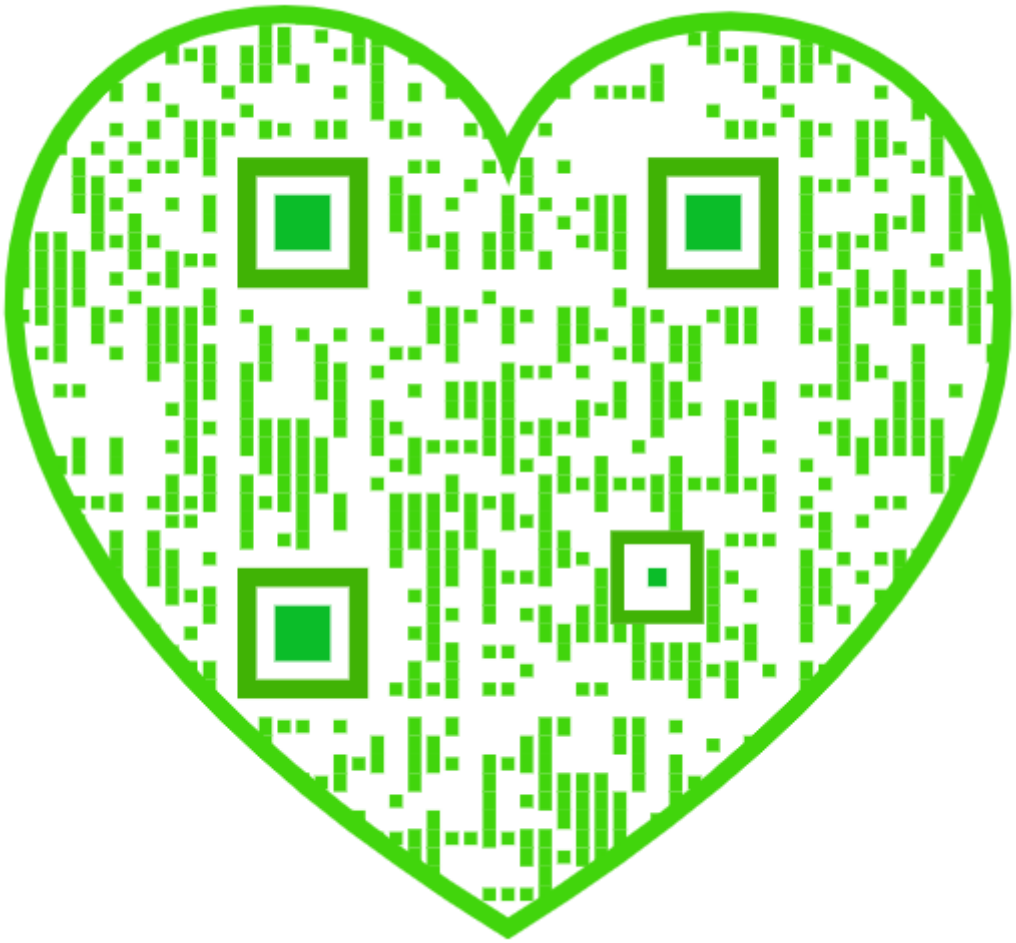

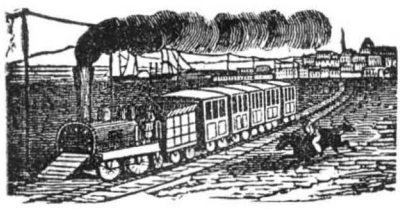

The Fair of the American Institute.

No. 8.

PREMIUMS AWARDED.

SILVER MEDALS.

Callahan & Wilson, Albany, for a Cooking Stove.

Mrs. C. Van Epps, Ovid, N. Y. for best Silk Cocoons.

S. O, Loomis, Windsor, Conn. for best Sewing Silk.

New York Dying Establishment, 45 John-st. for best Silk Twist.

Court & Dechaux, 579 Greenwich-st. for best Silk Dying.

J. H. Wood, Poughkeepsie, N. Y. for best Sleigh.

Ceo. D. Underhill, 162 Mercer-st. for Light Wagon.

Henry J. Kip, Newark, N. J. for Farm Wagon.

E. Davis, Jersey City, for Dirt Cart

Wands & Tremere, 210 Water-st. for 2d best Cooking Stove with Boiling Apparatus attached.

Lecount & Ward, 165 Chrystie-st. for Cart.

James N. Jerolaman, Newark. N. J. for best Coach Axles.

Harrison & Breese, Newark, for best Mail Axles.

Jones, White & Co. N. Y. for best Artificial Teeth.

J. B. Richards, 43 Eldridge-st. for workmanship on House's Magnetic Telegraph.

J. Atwood, 183 Broadway. for Elliptical Compass.

Benjamin. Pike. Jr. 294 Broadway, for Air Pump.

Gregg & Rupp, 120 Water-st. for Nautical and Surveying Instruments.

W. W. Rose, 19 Wall-st. for the best Blank Books.

J. C. Koch, 183 William-st. for best Book-Binding.

Platner & Smith, Lee, Mass. for best Letter Paper.

John Campbell & Co. 110 Nassau-st., for Hardware Paper made from Manilla Grass.

Richard Smith, 327 Stanton-st. for Parchment and Vellum.

Nathaniel Fean, 374 Bleecker-st. for Family and Fancy Bellows.

Waterbury Brass Co. Waterbury, Ct. for Brass Kettles.

John Morrow, Paterson, N. J. for Printers' Blankets & Papermakers' Felts.

E. B. Force, Red Mills, N. J. for Printers' Blankets.

Z. M. Quimby, 302½ Broadway, for best Shell Combs.

C. Coles, 187 Broadway, for best Morocco Cases.

B. J. Williams, Philad'a, for Fancy narrow slat Venetian Window Blinds.

W. E. Bose, 300 Broadway, for Gold and Silver Mouuted Cases.

John Bruce, 24 Platt-st. for Steel and Copper Plates.

W. D. Smith & Son, 1 Ann-st. for prepared Oil-Stone.

Isaac Edge, jr. Jersey City, for best display of Fireworks. Silver Cup, $15.

John W. Hardfield, Williamsburg, for 2d best display of Fireworks. Do. $10.

J. Gurney, 189 Broadway, for best Daguerreotype Likenesses.

J. & J. C. Conroy, 54 Fulton-st. for best Fishing Tackle of all kinds.

A. W. Metcalf, 63 and 65 Centre-st, for very superior Brass Cocks.

Bruno & Clinchard, 53 Mechanic-st. Newark, N. J. for superior Files.

Reeford Glass Co, Clinton Co. N. Y. for Crown Window Glass.

H. P. & W. C. Taylor, Phila. for best Transparent and Fancy Soaps.

Wm. Blake, Akron, Ohio, for best Fire and Water Proof Paint.

Smith & Curlett, Balt Md.—John P. Veeder, Agent, 88 Fourth-st.—for best adamantine Candles.

Tripoli for Polishing.

Of all the substances which have been applied to polish glass and metal none can equal that substance known by the name of Tripoli. It is a natural production, and was first brought from Africa to Italy by the Venetians and used by them in their palmy days of glass making, to give it that peculiar polish so much admired by other nations. Under the name of Italian Tripoli, its reputation has become world wide. But the same substance and a superior article to the imported Italian was discovered about a year ago, we believe, near Saco in Maine. The bed discovered is very narrow, but of rare quality and from what we know of it, we are positive that no other substance can equal it for the purposes we have stated. It should be in every family and in every workshop. We believe that its qualities are not generally known and we take this opportunity to speak of its merits, believing that many of our readers and others will be glad of the information.

The Manufacturing Agent of the Mount Eagle Tripoli Company, is Geo. N. Cheever, No. 21 Dock Square, Boston. The powder is put up in neat packages with full directions how to use it. Its price is from 10 to 15 cents per package and every person who has steel, iron, brass, or a reflector to polish up, should never have a package far from their elbows.

Singular Circumstance.

There resides in Delaware, some few miles from Templesville, Md., in Queen Ann county, a respectable farmer, having a daughter, now about eleven years oid, who, until attaining her fifth year, labored under an impediment of speech, which was thought incurable. At that time, for some trifling indiscretion, her mother spoke quickly and sharply to her and boxed her ears; singular to relate from that moment, for four months, the child never uttered a word. At the expiration of that time however, when the afflicted mother had become almost frantic at her supposed instrumentality in depriving her child even of her impaired speech, this faculty was again restored—and what is still more incomprehensible, without the slightest impediment of any kind—a blessing which she uninterruptedly enjoys to the present time.

The Late Transist of Mercury.

On Thursday the 9th ult., agreeably to the predictions of astronomers, the sun rose with the planet just entered on its disc, and with only occasional interruptions of thin clouds, remained visible till the time of the end, a few minutes before 11 o'clock A. M.

The duties of the Cincinnati Observatory were not neglected. At the invitation of the Director, Messrs. Walker, Yarnall and Pourtales made such observations of this interesting phenomenon as were suited to the occasion, and recorded in the Journal of the Observatory. It is but three years and a half since the great telescope was erected. The first use made of it was to observe the transit of Mercury on the Palo Alto anniversary on the 8th of May, 1847. The longitude of the observatory by that transit has received no correction till the recent comparison of it with the Atlantic observatories through the aid of the telegraph. We learn that the longitude obtained by Prof. Mitchell on that occasion, has needed only a change of about a quarter of a minute of time to conform to the most recent result.

It seems somewhat strange, that, in the present perfection of the science of Astronomy, an error of some three minutes should be committed by computers, in assigning the time of the end of the transit. Three minutes, however, is better that half an hour—the ordinary error of such work at the commencement of the century.

The Body Rendered Fire Proof.

Tanacre a Neapolitan physician states that the human body can be rendered insensible to fire by the following embrocation being applied. One ounce and a half of glue dissolved in four ounces of hot water; to this add an ounce of fish glue, and half an ounce of gum arabic.

This is a receipt which we have selected and must say that it is of doubtful progeny and more doubtful veracity, and we think this is a caution enough to copyists.

Compressed Air Locomotion on Common Roads.

The London Mining Journal says that a third trial was made a short time ago for testing the capabilities of Baron Von Rathen's compressed air locomotive for working the air expansively and which operated very well although there was one or two leaks which subtracted somewhat from the real power.—As it was, however, the carriage, weighing 3 tons, and carrying from 25 to 30 persons, started in good style, and kept pace with former experiments, as to time and distance: the motion was very regular, and the machinery stood well—the only casualty being the above leakage. The patentee considers he has now completely solved the problem of the practicability of employing compressed air in locomotion, and regulating it as to distance, speed, lead, nature of road, &c.—on which, with the greater or less perfection in the construction of the machinery, its success, of course, depends. He is prepared to show to mathematical demonstration, that he can embody sufficient power in this model air-carriage to carry 4½ tons, including carriage, 10 miles in one hour on common roads, or a train of 45 tons in the same time the same distance on a railroad; but if carried out on a large scale on the latter, he contends that the system would effect a saving of 75 per cent over the steam locomotive.

The Ball Axletree.

This is simply a groove turned in the axle, and a corresponding groove in the box, into which groove are dropped one or two steel balls, so contrived that one-half of the ball is always in the groove of the box, and the other half in the groove of the axle—thus preventing the possibility of the wheel coming loose, and in a considerable degree reducing the friction. The box is perfectly air-tight, and contains a considerable quantity of oil, and the process of removing the wheel when necessary is reduced to the very extreme of simplicity.

It is simply anti-friction balls, which have long been employed in shafting, applied to the axle of a carriage. The great difficulty with them lies in their being apt to wear uneven from inequalities in the metal.

Galvanic Sheeting for Ships.

In 1827, by the advice of Sir Humphrey Davy, the English Admiralty caused the copper sheathing of vessels to be covered with a certain number of plates of zinc, in order to oppose, by a galvanic action, the rapid corrosion of the metal in sea-water, particularly on some parts of the coast of Africa. But this expedient had soon to be abandoned, because considerable deposits of shells and agglutinated sand encrusted the vessel so rapidly, that its progress was retarded. The galvanic action in this case accelerated the phenomenon. The copper, rendered negatively electrical by the pile formed by the superimposed zinc and copper, attracted the insoluble bases, the magnesia and lime, held in solution in the sea-water, and the side of the vessel began to be covered with carbonate of lime and magnesia, the shells and sand being then precipitated on these earthy deposits.

Sea Weed for Manure.

It is a common thing for farmers on the sea coast of Connecticut and Massachusetts, to manure their fields from the produce of old ocean. During storms both sea weed and fish are frequently thrown upon the shore and sometimes the weed is gathered from the rocks, far below the surface of the water, by those who make it a business during the proper season for the purpose of selling to the farmers. The fish are principally the moss-bunkers, that come upon the whole Eastern coast in countless shoals during the summer months. But with these a great variety of others are brought to shore in the capacious nets that are used. Young sharks in considerable numbers are sometimes taken at a single haul, and are more appropriately employed in feeding corn to feed children, than feeding on them. The practice above noted has raised the price of land from $15 or $20 per acre to $75 and $100. It shows conclusively, the advantage to be derived by an intelligent husbandry, whose attention is awake to every object that can be enlisted for the promotion of its interests.

Holden's Dollar Magazine.

The December No. of our favorite is before us replete with instruction and amusement as usual. It is certainly a splendid number and though it bears no comparison to the January number (the proof sheets of which we have seen) it is yet the handsomest one yet issued. The frontispiece is certainly one of the finest specimens of Wood engravings ever seen in this country. We cannot too highly extol the meritorious qualities of this publication. In the year it has secured the enviable title of the "Blackwood of America," and seems determined to excel next year its previous reputation. It is essentially an American Magazine and as such should meet the warm encouragement of American mechanics, farmers and laborers, and no doubt will eventually secure the largest circulation of any similar publication in the world. Published by C. W. Holden, 109 Nassau street.

Gold Smelting.

The silver and gold smelting establishment of Mr. John Warwick in this city, now does a business of $3,000 a week. It is the largest Gold smelting works in the United States. Ores of all kinds and hundreds of barrels of Jewellers' sweepings, old crucibles, &c., are taken there to be ground up and have the gold extracted. After being twice refined the gold is feathered in water and returned in its purest state to the owner.

Factories in the West.

The Quarterly Review of the Methodist Church, comtemplates the time when manufactories will crowd the shores of the Ohio. It says:—

"The abundance of cheap fuel for the production of motive power—the proximity to the cotton growing region—and to a market for coarse cottons, extending from the Mississippi to the Pacific, and from the falls of St. Anthony to the centre of Mexico—the profusion and cheapness of all that is needed for the sustenance of man and beast—the rapid increase of population, eager to acheive a fortune more easily and rapidly than by the small and slow returns of agriculture, are consideratfons which render it impossible to doubt that other Lowells than that which skill and enterprise have constructed where the disadvantages were incalcuable, must spring up naturally and almost spontaneously, where the advantages are so conspicuous."

What is here said by the Review applies with double force to the South. We trust that such truths, which are rung so constantly in the ears of the South, will at last exhibit themselves in action.

British Steamers at Mobile.

We learn from the Mobile Register that arrangements have been made by which the British steamers will soon call regular at Mobile Point, on their way to and back from the West India Islands. This line of steamships annually consumes, it is said, about $450,000 worth of coal; two thirds of which will be taken from the coal fields of Alabama.

Five hundred tons of copper arrived in this city from Valparaiso three weeks ago. It is the first of a new kind of trade with South America, and the United States, heretofore the copper and ore of South America was all sent to England, now it has began to take a different route. The smelting business in the United States, (of all kinds of metals) is but in its infancy and we commend the science, for a deep science it is, to the study of our people.

The Queen and Prince Albert have appeared in rather new characters, suitors in the Court of Chancery, seeking to prevent piracy of their etching and drawings by one of the publishers in Paternoster-row. An injunction to restrain the publication has been granted.

Of the 56,000 square miles embraced in the limits of the Prairie State, (Illinois) 50,000 are fertile and arrable—an amount equal to the whole territory of New England, excepting Vermont.

Great efforts are now making throughout this and other States, to bring about a universal Ten Hour factory system. The manufacturers are not opposed to it but favorable, only they wish a general system for fair play.

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The Electric Telegraph.

No. 6.

In our last number we published an account of the first Alphabet Telegraph, published in 1841 and invented in 1839. The American Printing Telegraph is the invention of Mr. Royal House, patented in 1846, but invented some years before. The invention of Mr. House alihough complicated, is a very perfect machine, and here we would remark that " it is not always the simplicity of a machine that constitutes its chief merit." If simplicity alone was the basis of merit, then would the engine of Hero entitle him to rank superior as an inventor, to James Watt, a thing which no mechanic will allow. Mr. House's Telegraph prints messages in Roman characters, thus giving it the advantage of sending messages either in English, French or Italian, without the necessity of employing a person to translate, and beside it is not conventional in regard to the language of the message, which is not the case with an alphabet known only to the operators. When this invention was first brought before the public it met with much opposition, and the well known Mr. Smith made a very foolish public bet, that it would not operate. It has, however, been long in successful operation between this city and Philadelphia, and it transmits messages with wonderful rapidity—a rapidity which surprises every person who is not acquainted with its mode of operation. The type which prints the messages is placed upon a small wheel which moves horizontally like the type wheel described in our last number, but this wheel is moved—kept continually in motion by mechanical power—not electro magnetic, and the letters on it are detained to print by a key board like that of a piano, hence the type wheel may speed round with the greatest velocity and the letters can be printed just as quick as the key board can be operated to break and close the circuit—but mark this—it prints a letter respectively when the circuit is closed and when it is broken, presenting a new feature in combination with the electro magnet in telegraphing, viz. that the electro magnet is not " employed as a motive power to record marks." This is done by a combination of a peculiar escapement in combination with the type wheel and magnets. Prof. Henry we understand has pronounced it to be essentially different from the Electro Magnetic Telegraph of Morse and to be very ingenious. At some future period we hope to be able to publish a full description with illustrative engravings of this invention. We have said enough at present to distinguish its principle from the electro deflective and electro magnet telegraph, neither of which could be applied in any shape or manner to accomplish the same results, and this is a very good way to distinguish the difference between inventions, as it shows that there is no new modification in the difference, but an essential principle. A somewhat animated war of published letters took place last year in London, respecting Mr. House's Telegraph, between Mr. Jacob Brett and a correspondent under an assumed name in the London Mechanics Magazine, and the Patent Journal. At present the company to whom this telegraph belongs between this city and Philadelphia are doing a good business and it is fast increasing, so much so that a double line of wires is now being erected and in the course of next summer, there will be a new line to Boston and one to Buffalo.

The Telegraph Controversy.

There has been a bitter controversy going on lately in our newspapers about Telegraphs. The Tribune in this city, and the Louisville, (Ky.) Journal, have been perhaps the most distinguished for publishing various communications from different persons. We paid particular attention to all the articles as they appeared, and we are convinced that the parties who wrote the articles were self-interested, and in that case they unconscious to themselves exhibited a biassed judgment. The controversy between O'Reily and the Western Agents of Mr. Morse, we believe is settled definitely by law in favor of Mr. Morse—the case we believe was a fair infringement of Morse's Patent, but there is another telegraph controversy and a very different one at present and one which we believe the public does not understand from such articles as have lately appeared in too many papers throughout our country. The controversy relates to the Electro Chemical Telegraph.

Our readers will remember that when Mr. Bain the inventor of the Electric Clock, which has attracted so much attention in this and other countries, arrived here in the month of May last with his electro chemical telegraph, we with others were invited to examine and see its operations. As nothing of the kind had ever been exhibited here before, we desiring always to present something new to our readers, got up an engraving of it, which will be found on Pages 273 and 276 Vol. 3, Scientific American.

A short time after Mr. Bain arrived here—how long we cannot tell,—he made application for a Patent to the Commissioner at Washington. Mr. Bain's 2d English Patent for improvements on the electro chemical telegraph is dated Dec. the 12th, 1846, and an abstract of his specification is to be found in the London Patent Journal. It seems that Prof Morse lodged a caveat for an improvement on the electro chemical telegraph in January 1847, and he had applied for a Patent a few days before Mr. Bain. Owing to this being the case, Mr. Bain has been prevented from securing a patent before this time, and a controversy has grown out of the matter at issue, which matter at issue has been kept from the public and wrong views presented. We have actually been surprised at the great number of *exparte* paragraphs that have appeared in various papers lately, calculated to mislead the public mind. The question at issue is this. When Mr. Bain's application for a patent was examined, he was told, after it has passed through the hands of Mr. Page the Examiner, that it conflicted with the application for a patent for an electro chemical telegraph, by Prof. Morse, who had filed a caveat for it on the 20th January 1847, and applied for a patent not until 1848, what month we are not positive, January we believe. Mr. Bain got an English Patent thirty-nine days before Mr. Morse had his caveat filed. Mr. Bain's specification was not enrolled until June 1847, and Mr. Morse's not until January 1848. The conflicting point in the two applications, was for operating the electro chemical telegraph by the single circuit alone. The commissioner decided against Mr. Bain, grounding his decision upon the consideration that the time of Mr. Bain's enrolment was the true date of his invention and the time of Mr. Morse filing his caveat, the true date of his invention. This decision is a question of privilege, and we do not wish to say a single word against it, but we regret it, and could give good and just reasons for our regret.

The adverse decision was heralded very extensively throughout the country, and a correspondent in the Hamilton Gazette in Canada West, who neither understood the merits of the case, nor the principle of the invention in a long article denounced both it and Mr. House's telegraph as *too complicated to be useful.*

On Wednesday the 22d, Mr. Bain published a card in the National Intelligencer which was copied in the N. Y. Tribune on the 24th ult. stating that Mr. Bain had made application for a patent for his electro chemical telegraph of 1843, and that the commissioner had ordered it to be issued. But lo and behold right below Mr. Bain's card, was published the adverse decision of the commissioner regarding his application, but no date to it. This appeared to us somewhat singular and we could not understand it. But on Monday last Mr. Bain published a card in the Tribune of this City stating that the decision referred to was made more than a *month ago*. How it came to be placed below the inventor's card, does not look well for the paper that first published it. But the whole disputed point seems to be covered by the first patent of Mr. Bain, as in his last card he says it *transmits intelligence with great rapidity by a single circuit.* As the principle of the electro telegraph is exciting much attention at present we will end this article by stating that Mr. Bain is not the first inventor of the electro chemical telegraph nor does he claim to be. Neither is Prof. Morse. More about this in our next.

Indian Arrow-Poison.

Snake-like in form, the Urari, or Indian arrow-poison, winds itself around and among the huge trees, fantastically shaped, that spring from the deep fissures in the mountain rock, and often reaches to a height of forty feet before it divides into branches, which are densely covered with a rust-colored hair. The poisonous principle resides chiefly in the bark of the plant, which is stripped off, steeped in water for a certain time, simmered, and evaporated to the thickness of a syrup. It is then fit for use. " As much as I had heard of the fatal poison," says Professor Schomburch, " I nevertheless cannot abstain from noting the astonishment by which I was seized on seeing it used for the first time. While travelling, a deer was discovered browsing in the grass before us. One of the Indians took a poisoned spike, and fixed it to his arrow. Cautiously he stole upon the unsuspecting deer, and shot the arrow into its neck ; it made a jump in the air, fled with the speed of the wind before us, but had scarcely run forty yards, when it fell to the ground and expired." It will kill the strongest bull in four or five minutes ; and lizards and rats wounded with it died immediately. It may appear strange that this poison may be taken into the stomach with impunity. The writer relates that, when suffering from ague, and happening to be without quinine he took frequently the urari in doses of " about as much as I could get on the point of a knife." The stomach, in fact, digests the poison, and thereby alters its properties before it reaches the blood. It is also well known that the flesh of animals killed with the urari is quite innocent for the same reason.

The Pulque of Mexico.

The maguey, American aloe—Agave Americana—is cultivated over an extent of country embracing 50,000 square miles. In the city of Mexico alone, the consumption of pulque amounts to the enormous quantity of eleven millions of gallons per annum, and a considerable revenue from its sale is derived by government. The plant attains maturity in a period varying from eight to fourteen years, when it flowers ; and it is during the stage of inflorescence only that the saccharine juice is extracted. The central stem which encloses the incipient flower is then cut off near the bottom, and a cavity or basin is discovered, over which the surrounding leaves are drawn close and tied. Into this reservoir the juice distils, which otherwise would have risen to nourish and support the flower. It is removed three or four times during the twenty-four hours, yielding a quantity of liquor varying from a quart to a gallon and a half. The juice is extracted by means of a syphon, made of a species of gourd called acojote, one end of which is placed in the liquor, the other in the mouth of the person, who by suction draws up the fluid into the pipe, and deposits it in the bowls he has with him for the purpose. It is then placed in earthen jars, and a little old pulque—madre de pulque—is added, when it soon ferments, and is immediately ready for use. The fermentation occupies two or three days, and when it ceases, the pulque is in fine order. Old pulque has a slightly unpleasant odor ; but when fresh, is brisk and sparkling, and the most cooling, refreshing, and delicious drink that ever was invented for thirsty mortals.

The Burning Well.

A correspondent of the Presbyterian, Louisville (Ky.) gives the following brief account of a subterranean fire in Eastern Texas.

" There is a very singular circumstance in Shelby county, Texas, of a well that has been burning about twelve months, at the former residence of Judge Lusk. When he moved from the place he laid some logs over the well, from which he had used water for several years. Some time after the woods caught fire and the timber burning fell in, and ignited some substance, supposed to be stone coal. The rainy season has not extinguished it, but it has burnt incessantly. It does not give out a very agreeable feeling to the visiter ; for it is neither sublime nor beautiful ; but from the deep grumbling noise that is heard—the sulphurous smell, and the dark cloud of smoke, that is continually rising, a beholder is forcibly convinced that there is actually fire and brimstone in the subterranean regions. Various results are conjectured ; perhaps some geologist can give comfort to the anxious minds of the surrounding inhabitants by showing what will be the final termination of the Burning Well."

Ornament in Dress Sometimes Good.

The following is a passage in a letter from Mr. Franklin to Mr. Benjamin Vaughan, dated at Passy, July 26th, 1784. The Doctor is writing upon the benefits and evils of luxury —and says :

" The skipper of a shallop, employed between Cape May and Philadelphia, had done us some service, for which he refused to be paid. My wife, understanding that he had a daughter, sent her a present of a new fashionable cap. Three years after, this skipper being at my house with an old farmer of Cape May, his passenger, he mentioned the cap and how much his daughter had been pleased with it. ' But', said he, 'it proved a dear cap to our congregation.' ' How so ?' ' When my daughter appeared with it at meeting, it was so much admired, that all the girls resolved to get such caps from Philadelphia ; and my wife and I computed that the whole would not have cost less than one hundred pounds.' ' True,' said the farmer, ' but you do not tell all the story.' I think the cap was nevertheless an advantage to us, for it was the first thing that put our girls upon knitting worsted mittens for sale at Philadelphia, that they might have wherewithal to buy caps and ribbons there ; and you know that industry has continued, and is likely to continue and increase to a much greater value, and answer better purposes.' Upon the whole, I was more reconciled to this little piece of luxury, since not only the girls were made happier by having fine caps, but Philadelphia by the supply of warm mittens."

Geological Changes.—Past and Present.

All the researches of modern geology seem to prove that nothing is changed in the order of nature and that the same causes which operated in the first ages of the world, are still influencing the occurrences which take place under our own eyes. Certain facts, however, have hitherto appeared not to be referable to this common origin ; and the petrifaction of organic remains, in the midst of geological formations, is daily adduced as one of the most weighty arguments against the general law.

Few persons, indeed, will be ready to admit, what however, is an indisputable fact, that there are now forming, in the bosom of seas, petrifactions which in the double respect of chemical composition and mode of petrifactions, are altogether analogous to those which are formed in the ancient sea bed. To demonstrate this general fact, and to study the phenomena by means of which it is brought about, M. Marcel Sederres and M. L. Figuera have contributed valuable memoirs to the Annales des Sciences Naturelles.

An Ancient Dahlia.

In the travels of Lord Lindsay, the noble author states, that, in the course of his wandering amid the pyramids of that patriarchal and interesting land, (Egypt,) he stumbled on a mummy proved by its hieroglyphics to be at least two thousand years of age. In examining the mummy after it was unwrapped, he found in one of the closed hands a tuberous or bulbous root. He was interested in the question how long vegetable life could last and he therefore took the tuberous root from the mummy's hand, planted it in a sunny soil, allowed the rains and dews of heaven to descend upon it, and in the course of a few weeks, to his astonishment and joy, the root burst forth and bloomed in a beauteous dahlia.

Curious Icelandic Plants.

Many of the plants of Iceland grow to an unnatural size, close to the hot springs.—Thyme grows in the cracks of the basin of the Great Geyser, where every other plant is petrified ; and a species of chara flourishes and bears seed in a spring hot enough to boil an egg !

The number of staves made in Cincinnati during the last year amounts to 86,000—of which 53,000 were exported.

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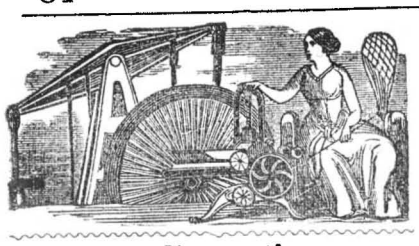


New Inventions.

Lead Pipe Machines.

One of our foreign exchanges, the Renfrewshire Advertiser, thus describes a new machine for making lead pipe, invented by a Mr. Young, of Paisley, Scotland. "The machine which he has constructed is in every respect fitted for the work for which it is intended, and is a triumph of skill on the part of Mr. Young of no ordinary character. There is, we believe, a machine of Mr. Young's construction in operation at present in Glasgow, made from the materials of one of a somewhat different make, which was first of all constructed. Mr. Young, however, has got one entirely constructed of new materials upon his own premises, and this machine we had the satisfaction of seeing first put in motion. Its first fruits were of such a character as to afford the greatest satisfaction to those parties who were present, and to convince all that the invention would amply reward the ingenious contriver. By this method pipes can be made of any length and any thickness, without a join. The lead is run from a boiler into a cylinder, and the pipe comes out perfectly formed, and ready for use, at the lower part of the machine. We may, on some future occasion, give a more minute description of it. In the meantime, we may observe that it is of the most compact appearance, stands ten feet high, is driven by a horizontal ngine, and occupies an area of only one or two square yards. In the making of pipes for electric telegraphs it will be of signal advantage. The invention is patented."

Machines for making lead pipe of any desired length have been for a number of years employed in this country, and a few weeks ago a patent was granted to Mr. S. Parks, late of Brooklyn, now of Hartford, Conn., for a new lead pipe machine, upon the Archimedian screw principle. The invention is a very beautiful and ingenious one. The molten lead is admitted into a cylinder in which there is a smoothly polished steel screw, which is set in motion whenever the lead is admitted, and which by its motion forces down the lead in a curved pipe form upon a core at the bottom of the cylinder, which forms the hollow of the pipe, while two metallic cheeks on the outside of the core straighten out the pipe in the most beautiful manner. This is perhaps the easiest operated machine for making continuous pipes, that was ever invented.

Ray's India Rubber Railroad Springs.

The springs for carriages, railroad cars and locomotives, made of Goodyear's metallic India rubber in combination with a metallic spiral spring, is now in use on almost all the railroads in the United States. The inventor is Mr. F. M. Ray, No. 100 Broadway this city, who has manufactured since the 1st of May the astonishing number of about thirty tons weight of the prepared India rubber. One pound is calculated to be as tenacious for a spring as twelve pounds of steel and it thus effects a great saving in weight as well as money retained at home, which would have to be sent abroad to purchase the steel.

New Invention for Pegging Boots.

The Lawrence Mass. Messenger, says that Mr. J. Robinson of that place, has invented a Patent Machine for pegging boots and shoes, with which one man can drive 100 pegs in a minute. At every revolution it cuts pegs from the sheet, makes the holes, and leaves them neatly and firmly set in the leather."

It is not long since a writer in the Tribune proposed a plan to take away the boot and shoe trade from our Yankee friends. The plan was to employ German shoemakers in this city who would work cheap and thus make work that could be sold for less than yankee peg work, so as to undersell old Lynn in the market, but here comes a Yankee invention to knock that scheme not into the middle of next week, but a great deal farther.

Improved Rat Trap.

Rats are not like our neighbors the Mexicans, to be vanquished either in fair fight or in one or two compaigns, neither is the same mode of warfare to be pursued to insure victory. But for all this as enemies they are not to be despised, as we are positive that "a little more grape Captain Bragg," will have but little effect to insure a route in their ranks as was the case with Santa Anna's lancers at Buena Vista. Well although we cannot bragg of the grape, we can *bragg* of this invention. It is a trap that can take a rat alive, and no such a word as *fail* about it. It was sent to us by one of our subscribers, Mr. John Siddell, and the first time he put it in operation he caught 16 in a few hours.

FIG. 1.

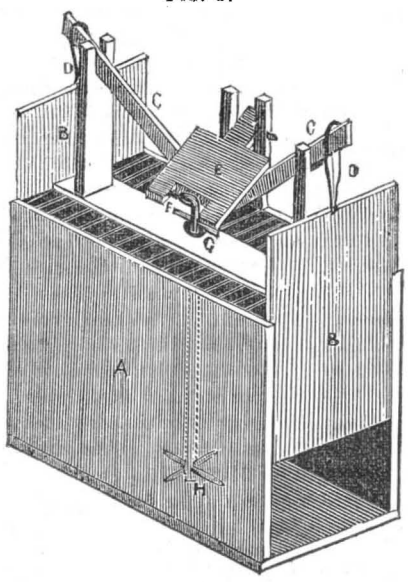
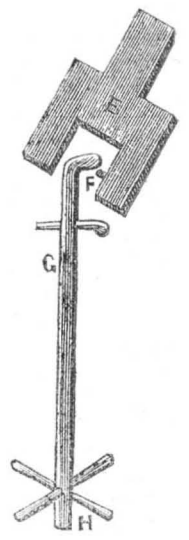


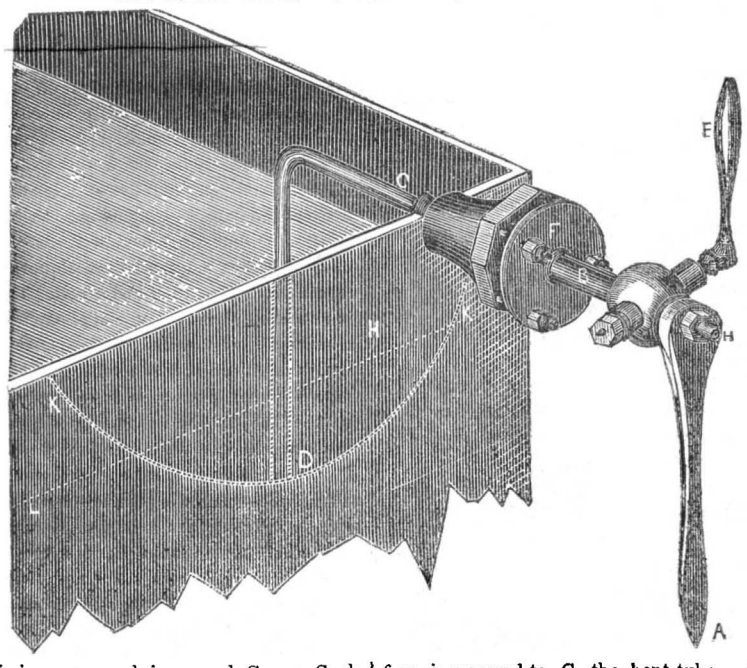
Fig. 1 is a perspective view and fig. 2 a section—the same letters indicate like parts. A is a square box like some in common use. B B are two doors that slide up and down in grooves in the side of the box. These doors are hung by straps D D, on spring levers C C. When the extreme ends of the levers are kept down, these doors are kept open, but when the levers are released these doors drop down in a twinkling. These levers are kept down by a spring board E, which has a small catch F in it that hooks under the top of the rod G, and thus holds the spring board down with the levers under it to keep open the doors B B.—

FIG. 2.



The rod G, passes down the inside of the box to the bottom, as seen by the dotted lines fig. 1, and it has four small arms or projections H, near its lower part. This rod can be easily turned round but no other way; hence it holds E down firmly, but being easily turned round it may be set free from its catch with a very slight touch. No bait need be used on the arms and only a little flour has to be sprinkled within the range of the four arms. The rat enters by the door and approaches the food for his repast. No polished hook on the arms attracts his crafty eye, but four quiet looking projections, which rather favor the operation, for the sagacious *rat*, perhaps imagining that he smelt a *rat*, touches one of the arms with his nose, when off goes the catch F, up fly the levers C C, and the scene is closed.

ADAMS' IMPROVED GUAGE COCK.



This is a new and improved Guage Cock for steam boilers, invented by Mr. John Adams, of Rochester, N. Y, a practical mechanic, and who has in this simple invention—in one single faucet. superseded the necessity of using three guage cocks, which is now the case in steam boilers, to ascertain the quantity of water in them.

This is a semi-section and perspective view with the top of the boiler removed to show the line at which the guage cock enters the boiler. The interior end of the guage cock has a screw upon it which screws into a bent tube having a sweep in the boiler equal to the whole distance at which the faucets are placed from one another as they are at present used, or it may be made to sweep through a far greater distance. H, is the water line in the boiler. D, is the end of the bent tube, and K K, represents the sweep of the tube which has just as much sweep above as below. B, is the faucet tube, and E is the handle of the stop to open and close the passage of B. The interior end of B, as we said before, is screwed to C, the bent tube. H, is the mouth of B. A, is the handle, secured on the outer end of B by a nut. The handle A, turns round the bent tube and therefore it is not screwed into the boiler, or it could not be turned round to guage the water. It therefore passes through a small stuffing box which is screwed into the plate of the boiler and is attached to it by a small moveable plate F, in which are holes through which run three screws that are fixed in the small stuffing box. This, however, could not make B fast in the stuffing box without something to keep the tube B, which moves round, from moving out and in. This is done by having a small circular shoulder turned on B in the inside of the stuffing box, while the orifice of F, is a sleeve of anti-friction metal that slips into the stuffing box against the interior shoulder of B, and by the plate F, being screwed to the stuffing box, the tube B can be moved freely round, and it is held snugly and steam tight in the boiler at the same time. Every engineer will immediately perceive the importance of this really beautiful invention. It has been highly recommended by able engineers who have used it—men whom we know to be well qualified to judge of its merits, such as Mr. Isaac Van Kuren, Superintendent of the Rochester and Auburn Railroad Machine Shop, where the inventor is employed as an Engineer—and next week we shall publish the testimony of other engineers who have expressed their opinions respecting its value.

Alpaca Umbrella.

A patent has been taken out in England for what is called an alpaca umbrella. The material which forms the screen in this umbrella is composed of fine wool, a material as elegant as silk, at least equally impervious to rain: it is unnecessary to add, that no comparison whatever can be made between it and cotton. The forms have been, as far as possible, attended to.

Although the screen of alpaca, must look better than cotton and will not be so apt to fade in color, still the price must be more. But as it cannot be much greater, we trust that some of our makers here will not forget to try a sample. If the warp of the cloth was linen and the weft alpaca, a most durable screen would be produced and one that we would almost prefer to silk, for appearance.

New Stove.

Mr. J. K Latrobe, of Baltimore, has made a very simple and beautiful improvement on the old Franklin—whereby it is well adapted to the burning of coal. It is set in the fire place and it has an air chamber below from which a constant stream of fresh air is supplied which is thrown out by the radiator through the room.

The great difficulty with stoves as they are now constructed, is, that they do not heat the room uniformly, and another great evil lies in people (especially those engaged in sedentary occupations), hugging the stove too much. No person should be ignorant of Dr. Arnold's work upon radiation and ventilation.

INVENTOR'S CLAIMS.

Wheels for Spinning.

Jacob Shaw Jr. Hinckly, Ohio, for improvement in wheels for spinning. Patented Oct. 10, 1848. Claims the construction and the combination of the vibrating frame with the accelerating wheel and bench by means of hollow rods constituting an axis for the vibrating frame and boxes or bearings for the axle of the accelerating wheel in such a manner that the motion of the vibrating frame and the motion of the accelerating bands retain the same degree of tension, in whatever position the vibrating frame may be placed, or whether in motion or at rest. The combination of the tredle with the vibrating frame and the bench and the combination of the parts composing the axis of the vibrating frame with the frame.

Lead Pipe.

Stephen Parks, Jr. Brooklyn, N Y. for Archimedean Lead Pipe Machine. Patented Oct. 17, 1848. Having thus fully described the construction and operation of my Archimedean Pipe making machine, what I claim therein as new, and desire to secure by Letters Patent, is the combination, arrangement, and operation with each other of the hollow cylinder A, the tube B, having a screw formed in a portion of its perphery, the shaft H, the core or mandril I, and the die F, substantially as herein set forth not intending to limit myself by this claim to the particular form or number of the parts as herein described and represented, or the material of which they are composed; but to vary them as I may deem expedient whilst I attain the same end by means substantially the same. [The letters refer to parts of the drawings.]

Administering Ether.

Lewis Roper, Philadelphia, Pa. for improvement in apparatus for administering Ether. Patented Oct. 10, 1848. Claims the mouthpiece on the peculiar formation of the upper part of the instrument or vessel above described fitting closely over the mouth and nose so as to administer the vapour of ether through these two organs simultaneously and in combination therewith, the arrangement of the air tube and perforated plate.

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NEW YORK, DECEMBER 2, 1848.

The Power of Water.

It is but a few weeks since the water in one of the large reservoirs of the Schuylkill Water Works, Philadelphia, burst through its embankment and swept every thing in its path before it. The damage of that accident, however, was small in comparison with another which has since occurred in a different part of our country. We mean the destruction of the newly erected dam over the Connecticut River at Hadley Falls, Mass. The Hadley Falls Manufacturing Company with the gigantic capital, it is said, of $5,000,000, undertook the gigantic project of throwing an immense dam over the river mentioned above, at Hampden City. The dam was completed on the 16th ult., and the day of its completion was the day of its doom. A great number of people from distant places had assembled to see the gates shut down and the dam filled, and the waters of the Connecticut arrested in their course. But from the first, after the gates were shut down, imperfections were discovered in the work, and although great efforts were made to stop the leak, yet the breach, small at first, widened with great rapidity, and when the waters in the dam had arisen within a few feet of the top, with a crash louder than the roaring of Niagara, about three-fourths of the embankments burst away before the mighty mass of angry waters. The scene by an eye witness is described to have been terrific and grand, and the people who went there to behold the mighty river arrested by the hand of man, beheld with dismay two thirds of the huge water wall more than 1000 feet long and 30 feet high hurled from its moorings and torn into fragments. The dam was constructed of immense timbers, fastened together and to the rocky bed of the river, on which the whole structure rested, with iron bolts. Great pains were taken in the construction of all the parts of the work, but the fault must be attributed to the principle of its construction. It neither possessed sufficient basis nor was it tapered on both sides and well puddled with clay between, which should have been the case. We know more than one man who predicted its destruction, " the first freshet." The loss has been variously estimated : perhaps it will be about forty thousand dollars, a great loss indeed—all swept away swift as the host—

" Which at sunset was seen,"
Like leaves of the forest when summer is green,
Like leaves of the forest by wintry winds blown
This host on the morrow -was scattered and strown."

The art of Dam building requires experience, practical experience, and a sound knowledge of the power of water. Both these qualifications are necessary. The dam broke away in the centre—at that part in the river where the greatest water power is exerted, showing that a great velocity as well as weight of water exerted a mighty force against the log wall vainly raised up to bear it backwards. Just let us reflect for a moment, that on a space of one foot behind that wall (counting its whole height and length) there were exerted against it the astonishing pressure of 937½ tons of water, and we may form some opinion of the power exerted against the dam by that amount being doubled every tier of cubic feet behind the first 1000 for the length and 30 for the height. We do not know what is the velocity of the Connecticut river at Hadley Falls, and we have not alluded to it, but the power of water " is as the quantity and fall of the perpendicular height." Let us consider that every cubic foot of water weighs 62½ lbs. and if the fall is 16 feet, the water will fall through that space in a second, then if we consider the weight of every cubic foot discharged, as being like the blow of a hammer, for a 16 feet fall, sweeping through that space every second, we will be able to form some estimate of the power of water, a power which can shatter the strongest steel like glass —a power which has torn cities from their foundations, destroyed kingdoms—aye, and made sport for "for forty days and forty nights" of the world itself.

Patenting Inventions.

A paragraph is going the round of the papers, stating that " Mr. Junius L. Clemmons of Davidson County, North Carolina, invented the Chemical Telegraph of Mr. Bain, and that he addressed a letter some years ago to the Patent Office on the subject of his invention."

Whether this is true or not we cannot tell, but it is exceedingly foolish to suppose that the Patent Office can take notice of such letters. It is not the business of the Patent Office to examine into the originality of any invention unless it is a legal application for a patent. Mr. Burke issued a circular stating that it was a common thing for persons to apply by letter to the Patent Office for information about new inventions. These letters are consigned to oblivion. When a person invents a new machine, or makes an improvement or discovery, he should make diligent enquiry of persons acquainted with the business relating to his invention or discovery, and having satisfied himself about its originality, he should make application for a patent forthwith. If the invention is new a patent will be granted, if not, no more expense than about twenty or thirty dollars is incurred. Two thirds of the fee for a rejected application is returned if there is no appeal, and the rest of the expense would be for drawings and duplicates, with the necessary papers,—some cost more and some less, according to the labor required. Many inventors have lost their inventions by procrastination.

Patent Cases.

Before Judges Grier and Kane, in the U. S. Circuit Court at Philadelphia, a case was decided on the 17th ult. for the infringement of a patent for Railroad Curves. The complainant was Stimpson, the defendants Lieper and others. The Jury returned a verdict for plaintiff for infringement in sixteen cases. The verdict was fifty dollars for each curve, with interest from the time they were commenced to be used.

On the 20th ult. before Judge Kane in the same court, an injunction was granted to Richard S. Childs against George W. Cross for manufacturing lampblack in violation of plaintiff's patent.

The Telegraph Case in Kentucky.

Mr. Woolford and Mr. Zook, connected with O'Reily's Southern line of telegraph, who were arrested and taken at Frankfort three weeks ago, by order of Judge Monroe, on a charge of having violated the injunction issued by his court, were fined $250 each and laid under bonds not to violate the injunction hereafter. The fines were subsequently remitted.

We understand that the U. S. Marshal for Kentucky has been directed by Judge Munroe to take possession of O'Rielly's telegraphic line through Kentucky forthwith, to seize so much of the posts and wires, and by breaking, interrupt the electric current of the People's line, as may be necessary to protect Morse & Co. from the violation of their patent; and give to him a continued power at his discretion to do what may be required for that purpose. In his opinion he says that the defendants are from the evidence prima facie violators, and that they will continue in that course, and that if they wish to use their line lawfully they must apply to the Judge.

We thought that Mr. O'Rielly had purchased House's Telegraph for Kentucky. It had been so reported, and it would have been wiser to do so than to have run the gauntlet, in violating an injunction.

By late foreign exchanges we learn that a patent for improvements in the manufacture of hydrogen gas from water, obtained recently by a Mr. S. White, was contested by a Mr. S. North of Manchester, who claims to be the original inventor.

A valuable coal bed has been discovered at Kellog in Arkansas. This is a treasure to the owners of the lead mines.

American Copper.

A mass of pure copper was discovered in the Lake Superior region last spring which weighed about 11,537 pounds. A lump of this copper rock has just been received at No. 239 Water st., this city, which weighs about 4000 pounds. This is the rock which was found in the process of exploring an old open cut of Aboriginal digging, which was discovered by the appearance of a slight depression on the surface of the ground In the bottom of this cut, covered by fifteen feet of earth in which were growing trees fully five hundred years old, lay this mass of pure copper, weighing 11,537 pounds, with every particle of rock hammered clean from it, supported by skids, and surrounded by traces of the use of fire either in the hope of melting it or to aid in freeing it from the rock. Near it were found several implements of Copper, showing that the ancient miners possessed the arts of welding and of hardening Copper—arts now unknown. It would seem that they failed in their attempts to break up this immense boulder or to lift it out of the cut.

What were the people who first were the miners, will never be known. This assertion we make with all due allowance for the antiquarian lore and zeal of the indefatigable Squires and the the Smithson Institute. What were the calamities of war or pestilence. or famine, that stopped the ancient miners, no one can tell, and never will, but they were at least a more civilized people than the race that succeeded them. The works of the old miners may be traced for two miles on this vein, and on other veins in the vicinity for a considerable distance. They were ignorant of the use of iron and worked very awkwardly. The locality of these developements is the cluster of hills known as the " Three Brothers," two miles east of the Ontonagon, about twelve miles up that stream, and some 300 feet above the level of the lake. There are three large and rich veins here within a short distance of each other, at least one of them rich in silver, and which belongs to the Minesota Company in this city.

In the History of Columbus by Washington Irving, it is stated that the Spaniards discovered in St. Domingo old mines of gold diggers but no tradition of the miners was found among the natives.

Inland Navigation.

A short time ago a steamboat was launched at the Fish House Bridge, in Fulton County, this State, intended for the navigation of the Sacondaga river, between the former place and Conklin's Mills, a distance of about twenty miles. The circumstance so novel as the launch of a steamboat in such a locality, drew together a crowd of some five hundred persons, and was the occasion of great congratulations with the villagers and surrounding neighborhood.

The Sacondaga is a tributary to the Hudson, and the region referred to in the above paragraph is on the confines of the great wilderness in this State known as " John Brown's Tract." The existence within the limits of New York of a district of country embracing an area of nearly 5,000 square miles—equal to about two-thirds of all Massachusetts—and yet wilder and less known than any other portion in the United States, is a very remarkable fact. This region is the hunting ground of the Northern huntsmen, and the panther and deer are still found there. The whole region we know in respect to soil is barrenness itself. There never was a crow that spread its wings to cross the tract but made its will before it took its flight.

The Value of Steam Power.

Suppose for a moment that the power of steam was wrested from our service—the labored breathings, the shrill whistle heard no more—the factory lately instinct with life, a deserted ruin—the gigantic ocean steamer, floating a crippled hulk upon the deep—on our mighty rivers no longer seen their floating palaces, nor our mountain solitudes startled with the impatient neighings of the iron horse—the printing press thrown back a century, no longer giving forth its hourly thousands, and the necessary intellectual food of our reading millions. What would we be—and where ?

A new kind of Wheat.

Advices from St. Petersburg to the 12th of August, mention that a new variety of the Arnautka wheat has recently been discovered and cultivated in Bessarabia. It is called the Kolus, or large-eared wheat, on account of the peculiar beauty of its ears. At present it is limited to mere seed wheat, and fetches twice the price of the ordinary Arnaukta. One other and important peculiarity of this grain is, that it is less affected by drought than any other varieties. At the same time it posseses several other features, being distinguished by its greater fertility, its deep amber colour, and its earlier ripening. This important discovery was made by a peasant of the name of Bulatowisch, in the village of Troitzk, in the district of Bender, who being a close observer of nature, detected in his crops certain ears which were larger and became ripe more speedily than the rest of the crop. These he collected and sowed separately, and the result was an abundant harvest, and the introduction of a new and valuable variety of wheat. The event had created a great sensation amongst the agriculturalists and dealers in grain, and the new wheat well merits being named after its discoverer.—[Although it is, perhaps, a kind which would resist excess of moisture, it might be quite beneficial on high lands as being capable of withstanding the effects of drought. The event is interesting speculatively ; and as such we would direct the attention of our agricultural readers to the subject, as this wheat must be important to farmers in many sections of our country.]

Experiments with Propellers.

C. H. Haswell Esq., the engineer in chief of the navy is now engaged in making a series of experiments, by order of the Navy Department, with the various descriptions of propellers from the Archimedean screw up to the kinds now in general use. The wheels are attached to the little steam yacht May, belonging to Captain R. F. Loper, and her speed tested with each, by running between certain points on the river, where the distance is known with accuracy by the government survey. The Archimedean screw, the straight blade Loper propellers, and the other of his improved wheels with cast iron hubs, and the blades attached at various angles, have already been tested, and four other varieties are yet to be tried. The wheels with which the experiments are making, are all of the same diameter, and on a par with regard to their propelling surface. An interesting report upon the subject will probably be submitted to the Department by Mr. Haswell, upon the completion of these experiments.

Antiquarian Search.

E. G. Squier, the well-known antiquarian author has gone westward for a thorough examination of the traces of early civilization in this country. He goes under the joint auspices of the Smithsonian Institute and the Historical Society of New York.

We have been informed that Mr. Squier has lately discovered a key to the hieroglyphics that are found engraven on a number of ancient rocks, &c. whereby he is enabled to read their meaning. The result of this discovery may gratify some curiosity.

Copper Mining.

There is a valuable copper mining establishment now in active operation at Perkiomer Creek, Pa. The miners are principally English and the ores are shipped to Baltimore to be smelted.

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Woodworth's Patent.

" The schedule referred to in these letters patent, and making part of the same, containing a description in these words of the said William Woodworth himself, of his improvement in the method of planing, tonguing, grooving and cutting into mouldings, of either, plank, boards, or any other material, and for reducing the same to an equal width and thickness; and also for facing and dressing bricks and cutting mouldings on, or facing metallic, mineral and other substances.

The plank, boards, or other material being reduced to a width by circular saws, or friction wheels, as the case may be, is then placed on a carriage, resting on a platform with a rotary cutting wheel in the centre, either horizontal or vertical. The heads or circular plates fixed to an axis, may have one of the heads moveable, to accomodate any length of knife required. The knife fitted to the heads with screws or bolts ; or the knives or cutters for moulding fitted by screws or bolts to logs, connecting the heads of the cylinder, and forming with the knives or cutters a cylinder. The knives may be placed in a line with the axis of the cylinder, or diagonally.—The plank or other material resting on the carriage, may be set so as to reduce it to any thickness required ; and the carriage moving by a rack and pinion, or rollers, or any lateral motion to the edge of the knives or cutters on the periphery of the cylinder or wheel, reduces it to any given thickness. After pasting the planing and reducing wheel, it then approaches if required, two revolving cutter wheels, one for cutting the groove, and the other for cutting the rabbits that form the tongue ; one wheel is placed directly over the other, and the lateral motion moving the plank or other material between the grooving and rabbiting wheels, so that one edge has a groove cut the whole length, and the other edge a rabbit cut on each side, leaving a tongue to match the groove. The grooving wheel is a circular plate, fixed on an axis with a number of cutters attached to it, project beyond the periphery of the plate, so that when put in motion, will perform deep cut or groove parallel with the face of the plank or other material. The rabbiting wheel, also of similar form, having a number of cutters on each side of the plate, projecting like those on the grooving wheel, cuts the rabbit on each side of the edge of the plank, and leaves the tongue a match for the groove. By placing the planing wheel, axis, and cutter knives vertical, the same wheel will plane two planks or other matetial in the same time of one, by moving the plank or other material opposite ways, and parallel with each other against the periphery of the planing or moulding wheel. The groove and tongue may be cut in the plank or other material at the same time, by adding a grooving and rabbiting wheel.

Said William Woodworth does not claim the invention of the circular saws, or cutter wheels, knowing they have long been in use, but he claims as his invention, the improvement and application of cutter or planing wheels to planing boards, plank, timber, or other material; also his improved method of cutters for grooving and tonguing, and cutting moulding on wood, stone, iron, metal, or other material, and also for facing and dressing brick; as all the wheels may be used separately and singly for moulding, or any other purposes before indicated. He also claims as his improved method the application of circular saws for reducing floor plank and other materials to a width. Dated Troy, Dec. 4th, 1828. WILLIAM WOODWORTH.

Witnesses : Henry Everts : L. S. Gleason.

☞I certify the above is a true copy of the Schedule attached to my patent.

WILLIAM WOODWORTH.

Improved Claim.

This improved claim is the basis of all the issues of Woodworth's patent; and revised from the original, by Mr. C. M. Keller we believe.

CLAIM —The employment of rotating planes substantially such as herein described, in combination with rollers or any analagous device to prevent the boards from being drawn up by the planes when cutting upwards, or from the reduced or plained to the unplained surface as described. And also the combination of the rotating planes with the cutter wheels for tonguing and grooving, for the purpose of tonguing and grooving boards, &., at one operation as described. And also the combination of the tonguing and grooving cutter wheels for tonguing and grooving boards at one operation as described. And finally the combination of either the tonguing or the grooving cutter wheel for tonguing or grooving boards, &c. with the pressure rollers as described

Printing and Literature in China.

The Chinese lay claim to the invention of printing, at an early period. From the natnre of the language however, this art does not appear capable of much improvement, since the Chinese language consists of between 70 and 80 thousand characters, each character representing a distinct word. It seems almost impracticable to use moveable type, and therefore they adopt the plan of cutting in relief all the characters of the work to be printed, on slabs of very hard wood. The printer daubs these over with a preparation of Indian-ink, and the paper, being pressed upon them, receives the impression. One coating of printing fluid is sufficient for two or three impressions, but the paper being of too porous a nature to receive impression on both sides it becomes necessary to fold the paper. These doubled sheets are then stitched together, the fold is at the outer edge, with two coarser sheets of paper to form a cover. But the wealthier classes are as particular as we are, in their bindings, which are of beautifully figured silks and satins, sometimes of gold or silver tinsels. The Chinese being a reading nation, never destroy the slabs on which the characters are cut, which are laid by with great care, and the place of their deposit is referred to in the preface of the work.

Books are sold at so cheap a rate that they are within the reach of all. But it is deplorable to witness the depravity of taste so publicly exhibited in China, by the circulation of an enormous number of obscene publications and indecent engravings which are eagerly sought after. The taste for reading may be very cheaply gratified in China, by means of itinerant circulating libraries, which are carried about by their proprietors, in boxes slung over their shoulders. In no part of the world is education so universal as it is in China. In such estimation is literature held that literary attainments form the only passport to the highest offices in the state.—Each province is furnished with officers appointed to examine claimants or aspirants to state preferment, who go their circuits twice in each year. Each candidate must submit to repeated examinations previous to the distinction of being placed upon the books for preferment. When a man has reached the highest class of literary attainments he is examined by the Emperor in person, and if approved of by him he attains the highest honors. It would appear that genius or originality is not so much admired in China as memory. The power of reciting the greatest number of the sayings of their ancient sages is considered the acme of learning. Every literary honor conters the rank of a mandarin on its possessor; and each grade is distinguished by its peculiar dress. Although honors are not hereditary (even the emperor selects whom he pleases as his successor from the royal blood,) yet the descendants of men of learning are treated with the greatest respect. In proof of this the descendants of Confucius, who died more than two thousand years ago are treated with the greatest consideration by all classes from the emperor to the lowest coolee. So highly is learning prized, that very frequently, deceased ancestors are ennobled in compliment to the attainments of their descendants. The emperor causes a book of merit to be kept, in which are recorded the various titles and descriptions of the mandarins, and those of their actions which are deserving of praise. Should however a mandarin be degraded (which frequently occurs) the reason of his punishment is stated with equal accuracy. Gazettes, by the emperor's command, are commonly published at Pekin, which contain imperial grants of land remission of taxes, public acts, &c. &c. The day which is selected by the emperor for all public executions is notified by means of this gazette. The degradation of mandarins is here announced ; and the events of war are bombastically set forth, which invariably represent the deeds of the nation as successful. The official reports contained in this gazette, during the late war, of the thousand upon thousands of the English who were daily slain and driven before their conquerors, were truly astounding.

Loss of the Victoria Balloon.

Mr Green, the veteran English æronaut, has had the misfortune to lose his celebrated Victoria Balloon, by means of which he has made many voyages, sometimes accompanied by a number of his friends. He had given notice of his intention to make his 409th ascension at Halstead on Oct. 27th, but a violent storm of wind and rain compelled him to postpone the excursion to the following day. On that day the weather had undergone no improvement. A great concourse of visiters, however, having assembled, the process of inflating the balloon was suffered to go on, in the hope that the storm might abate. The sequel is thus described by the London Times:

The committee had made the best possible arrangements ; all parties concerned were in harmony, and anxious to give satisfaction—but the elements forbade the fulfilment of their desires. The storm increased, the wind kept up its attacks on the restrained ærial monster as though determined to sweep it away. Moored to the earth by five strong ropes and stakes, ballasted by about one ton and a half of iron weights attached with ropes to ring or hoop, surrounded by about 30 or 40 powerful laborers and members of the committee, employed under the control of Mr. C. Green and his brother, in governing the furious rolling and violent lifts and plunges of the grand prisoner ; it seemed for a long time the efforts and resolute energy of humanity might be allowed a victory over the fury of the blast. But alas! about a quarter to 12, o'clock, when the hurricane was at its height the immense inflated creature was raised by a sudden jerk a few feet from the earth. Again and again it lifted and rolled and dashed itself to the ground ; and on the part of the brave fellows who stuck to the ropes and netting there was an indomitable preseverance scarcely conceivable. The danger of being dashed among the dangling weights, or violent hurled to the ground, was most imminent but all held on manfully until, at 12 o'clock, one of the long strained ropes was snapped by the throes of the immense machine. At once, the hoop with the iron weights and 20 human beings were lifted up six or eight feet from the ground. The hoop broke in halves, dropping men and iron weights in a confused heap beneath ; and doubling its height, the balloon rose to 16 or 18 feet, with the stakes by which it had been confined wrenched from the ground, and two or three men still hanging on the hoop. The netting however being no longer equally retained by the broken hoop, and the balloon rolling entirely over on its side in the air (owing to the detention of one remaining rope,) the netting suddenly ripped up on the side of the balloon then uppermost, and the silk enclosure, shelling itself out of the ripped envelope, burst from end to end. The men and weights and netting fell mingled in confusion—away flew the immense mass of silk, rent in every direction, and the grand balloon was no more!

The Power of Music.

Music exerts a singular influence over the minds of men, but perhaps over no man did it exert such a singular influence as over Martin Luther. One striking peculiarity of his character was his singular and enthusiastic love of music. Not that there is abstractly any thing remarkable in such a passion ; but in him it had a singular effect—contrasting strikingly with the bold and indomitable qualities of his nature. He had an admirable ear for harmony, and by no means unproficient on several instruments. He had also a beautiful voice, which he constantly kept in order by the chanting of hymns and several songs. The principles of church music he studied profoundly—and he composed several pieces of great merit. But the most striking thing about his musical character was the power which melody had over himself. He seemed melted and subdued into a state of almost helplessness by its tones. Amid their influence, all other faculties of body and mind appeared suspended :—he was in a state of ecstatic rapture. In letters which he wrote to Liuccius, (Frankfort edition 1647,) we find him jesting about his extreme susceptibility—which he considers as a weakness in his character. He tells Liuccius seriously that it was his custom to sing a hymn every night before he retired to bed ; and, such was the soothing power of the melody on him, that however much he might have been excited or troubled throughout the day, from the moment when the key fell upon his ear, he forgot all earthly matters and vexations.

TO CORRESPONDENTS.

" F. R. B. of Ill."—The engine we have would answer your purpose fully and you would be pleased with it. We could not dispose of the engine apart from the boiler. You probably saw the engraving and description of them which we published in No. 9 of this vol. Scientific American. Much obliged for the names you sent ; hope to receive more from you. $2, all right.

" H. J. B. C. of N. C."—J. Grant, Providence, R. I., we believe is the name of the gentleman to whom you refer. Further we have no recollection or way of ascertaining.

" G. W. of N. Y."—The expense of printing your table would be $25. We do not think it would pay.

" J. & P."—We have not yet got the claim you desired but whenever it is received yon shall have it.

" H. C. of ——."—We doubt whether the application of a syphon formed pipe to the upper end of a pump would accomplish the object at which you aim. You can easily try.

A. S. of Ky."—Please accept our thanks for the very fine list of subscribers you have sent: we hope to keep them on our list always, together with others which you may hereafter send. We are glad to know that you are so well satisfied with the engine lathe we sent you, we presume you will not need any hint from us to tell your friends that whenever they wish machinery to send to the *Scientific American* office. A 4 horse engine and boiler, new and complete will cost you $450, 6 horse ditto $600. We can send you one of either size whenever you wish. Good second hand engines can be had for nearly one third less. Mr. S. has paid for your third volume. $8 all right.

" W. W. H. of Pa."—We received your letter and pamphlet with much pleasure. The first and second vols. of the Scientific American cannot be obtained. We saw sometime ago one of your muskets with which we were highly pleased. Would you not like to publish engravings of some of your inventions in our paper? It would give you much creditable notoriety, and aid you in disposing of your Patents if you so desire. The expense would be trifling.

" F. of N. Y."—In last week's paper you probably saw an account of Remington's bridge which gave an outline of his mode of construction. The paddle wheel you refer to is not yet Patented, though measures are in progress. The paddles come from the water perpendicularly owing to the superior gravity of the metalic part ; but they do not preserve their perpendicularity in the water unless the pressure upon both surfaces is the same. On entering the water they seek such an angle as makes the pressure on both surfaces equal.

" J. A. P. of Ala "—You can obtain such a machine for from $10 to $35 of any manufacturer of Cotton Machinery.

" G. M. G. of Mass."—We could not dispose of one volume of the work as both must be taken together. Price $25. We have never seen a sieve exactly like yours. Send on your drawing.

" A. B. of Mich."—Both your letters have been received and the money remains with us subject to your disposal.

" C. L. of Ct."—There is little prospect of doing any thing this winter with *our* windlass. Relative to the other invention see answer to " I. A. of Pa." under Patent Correspondence.

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"J. B. C. of Ala."—By a differently constructed boiler from yours and the use of coal you could save much in fuel. Perhaps, however, coal is dearer than wood for an engine, where you are. We have heard Morse's Air distributor very highly spoken of by those who have the invention in use. Further we know not.

"H. B. of N. H."—We understand that the drawings of which you enquire, are about being published and as soon as we rceceive some copies we will notify you through the Scientific American.

"J B E. of Pa."—We shall publish next week—just one hour too late for this paper.

"J. R. of Md."—We know nothing in regard to the plan of insulating wires of which you speak.

"B. D. C. of Ct."—We are yet able to furnish the 3d volume of the Scientific American neatly bound for $2,75, or in sheets complete for $2, accompanied with an Index. The *complete* sets of vols. 1 and 2 are entirely exhausted; we are able, however, to furnish the 2d volume minus but 4 Nos., neatly bound, for $1, and in sets in sheets minus those 4 Nos. $1,50. The numbers of vol. 1 are entirely exhausted. If you can procure a copy of vol. 1 for $4 with all the numbers in good order, we advise you to secure it.

To Patent Correspondents.

"J. R. of N. Y."—We suppose you wish to enter a Caveat at the Patent Office, as there is no other way by which you can notify them of your invention except to your own *dis*advantage. A caveat prevents any person for the period of one year, from obtaining a patent for a similar thing without notice being previously given to you. Time is then allowed for each party to present their claims. If you have matured your invention we should advise you to patent it at once. The Caveat fee is $20; Patent fee $30. Do not send a description of your invention to Washington except in the form of a caveat or application for patent.

"C. & G. of Ohio."—We think there is nothing to prevent the success of your application for a Patent and it will hardly be worth while to go to the expense of an official examination. We shall prepare your patent papers at once. $25 all right.

"D. V."—We are not disposed to accept your offer.

"T. A. D. of Ky."—The principle you present is not new, besides it is covered by Morse's Patent. It will, we think be a useless expense to apply for a patent.

"I. A. of Pa."—We have had as many as six letters from persons who say they have invented the same thing also. No patent can be obtained *we* think.

"H. C. B. of Ohio." We are acquainted with the express line between N. Y. and B.—cannot get any trace of your box. We had one from your place a while ago which was very long in coming. You will doubtless hear from it soon. In regard to the questions you ask please send $2.

"H. C. of Ga."—We could not ourselves nor do we know of any one who would undertake to secure your Patents on the terms you name. The expense of a patent is quite trifling and if you try you can doubtless find some one of your acquaintances who would join you.

"L. F. M. of N. Y."—You could not patent the application for fastening doors. There is nothing about it you can patent unfortunately. We have not time to look up any one to make them. Vol 3 and the numbers of vol. 4 now issued are herewith sent. $10 will not begin to buy a working model of an engine; $50 will. $4 all right.

"E. F. W. Pa."—We have since ascertained that the same invention was discovered a long time ago, and we now think you could not obtain a Patent.

"G. S. D. of Mass."—We do not think it would pay you to get it patented. It is a very good thing but too many patents have already been granted on similar constructions.

S. G. Jr. of N. H."—In our opinion you conld not obtain a patent for the application of Gutta Percha to the purpose you name nor for the method of applying water, as it is not new.

"S. T. of N. H."—Your papers will be ready in a few days. $30 all right.

"J. C. M. of Mich." A model is indispensible as they require one at the Patent office and we must make the drawings from it. Send the model via Chicago. From that place there will be plenty of chances to send here.

"A. Mc. A. of N. Y."—So long a period has elapsed that you could not obtain a re-issue, nor if it were possible should we wish to undertake the case on the terms you name. $1 all right.

"H. L. M. of Ct."—We have known of one or two instances where machines have been stopped by Gibson, though we do not think it an infringement on Woodworth's Patent. $1 all right.

"J. P. of Mass"—It is impossible to say with certainty whether you could obtain a Patent or not for your mode of preparing glue. You could if it is entirely new and really useful. Our way of preparing glue is not to pound it up as you mention.

"D of N. Y."—Send on your model.

"J. & N. E. of O.," "M. & M. of Mass.," "B D. S. of Pa.," and H. G. F. of Ct."—Your specifications have been received since our last issue and sent with the drawings to Washington.

"S. G. W. of N. Y."—Both of your specifications came duly to hand and the amount received is all right. They have been forwarded to the Patent Office. Your Corn Sheller will appear in our next number.

Robbery of the Mail.

On last Saturday evening the Way Mail for the South was robbed in the City of Philadelphia. We are afraid that some of our Southern correspondents may miss their letters as we sent away quite a number on that day.

The List of Patents.

Our regular weekly list of Patents had not arrived from the Patent Office when we went to press.

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Augusta, Maine, Oct. 28, 1848. o28 1y

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o7 2m* New Haven, Ct.

Those Hats

KNOX of 128 Fulton street, is on hand with his Autumn style of Hats, and as usual furnishes a little prettier shape, made of a little better material and for a much less price than many of his Broadway friends who boast of the superiority of their productions.

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Daniel's Patent Planing Machine.

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THIS Machine is now in operation at Mr. William Burdon's, 102 Front st., Brooklyn, every working day, between 9 and 12 A. M.

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Also for sale, a first rate up and down saw for sawing out curves. It is in complete order, already set in frame, with table, fly wheel, band pulley, &c.—Length of saw 2 ft. 6 in. Price for the whole $25.

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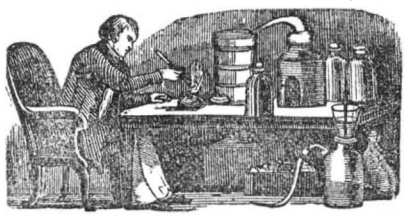


For the Scientific American.

New Chemical Law.

No. 11.

If we proceed with another class of substances, differing in chemical properties to the four elements we have just classified, we may probably arrive at the following aggregated series, which possess a radical with the atomic weight of 8.

	Sp. Gr.	Boil. Pt.	
Sulphur 8X2=16.00	1.98	600°	solid.
Selenium 8X5=40.00	4.32	650°	solid.
Tellerium 8×8=64 00	6.14		solid.

No aggregated series can be produced which are more perfect in the similarity of their chemical properties than these. The specific gravities are on a regular increase and so are all the boiling points. The boiling point of Tellerium although not precisely known is greater than that of Selenium. The gradual increase of all its properties may also be distinctly seen. Thus the series commencing at sulphur, a non-metallic substance, gradually runs into the metallic and ends in the metal Tellurium. The same gradual increase of properties may be seen in their powers of conducting heat and electricity—thus sulphur is a non-conductor of electricity, selenium an imperfect, but tellurium is a perfect conductor. No substances are more similar in their chemical properties than these, to which every chemist will agree. We have taken the atomic weight of the radical at 8. The following shows the close agreement which is found to exist between the calculated and experimental atomic weights.

	By Calculation.	By Experiment. Kane.	Turner.
Sulphur	8X2=16.00	16.12	16.10
Selenium	8X5=40.00	39.63	39.60
Tellurium	8X8=64.00	64.25	64.20

In the last example of aggregated series it was shown that each substance comprised in it united with an equal number of atoms of oxygen to form an acid, which was 5. In this example the substances unite with an equal number of atoms of oxygen to form an acid, according to the requirements of the law.—And the acids thus formed possess similar chemical properties. They also form compounds with other substances which also possess similar chemical properties.

Sulphuric Acid 2R+O3+HO. specific gravity 1.850. boiling point 620°. fluid.

Selenic Acid 5R+O3+HO. sp. grav. 2.625, fluid.

Telluric Acid 8R+O3+HO. solid.

The specific gravity of telluric acid should therefore be greater than that of selenic acid. The boiling points also increase, but the precise temperature at which the selenic and telluric acids boil has never been ascertained, as they both decompose at high temperatures, the one giving oxygen and selenium, while the other oxygen and tellurium. There is no need of speaking of their similar chemical properties, as they are well known to every chemist. From the fact that the sulphate of barytes is insoluble in water, it is probable that the same is the case with the seleniate and the tellurate of barytes. The sulphurous, selenious and tellurious acids afford an illustration of the gradual increase of density which the law requires. Thus sulphurous acid is a gas, whilst the two remaining substances are solid. The combinations which these substances form in uniting with hydrogen are also precisely similar, possess the same smell, and precipitate the metals from their solutions in the same manner. Thus if we knew the properties of the telluretts, we also know the properties of the sulphurets. By these statements and the properties of this law, it may be seen that the specific gravities of any sulphuret, seleniuret or telluret of any particular substance whatever, must either increase or decrease in a regular manner; the same may be said of any of the sulphates, seleniates or Tellurates of any particular substance whatever. In fact every similarly formed compound of sulphur, selenium or tellurium must possess specific gravities which either increase or decrease in a regular manner. The boiling points of every similarly constituted compound of sulphur, selenium or tellurium must also increase. The same may be said of any other property whatever. If this law therefore is untrue, it is very easy to discover some departure from the numerous conditions given, as it is evident that these conditions ceuld not answer through all the aggregated series and their compounds which have been given and which can be produced. It may be seen that the aggregated series just given corresponds in its general similarity with the known series as aggregated from the radical C H. Why then not ascribe the same law to govern both, and so declare sulphur, silenium and tellurium to be compounds and produced by the aggregation of a radical, possessing an atomic weight of 8. S. N.

Bridgeport, Conn.

Disinfecting Property of Coffee.

The London Medical Gazette says that coffee is one of the most powerful means not only of rendering animal and vegetable effluvia innocuous, but of actually destroying them. A room in which meat in an advanced degree of decomposition had been kept for some time, was instantly deprived of all smell on an open coffee roaster being carried through it, containing a pound of coffee newly roasted. In another room, exposed to the effluvium occasioned by the clearing out of a dung pit, so that sulphuretted hydrogen and ammonia in great quantities could be chemically detected, the stench was completely removed within half a minute on the employment of three ounces of fresh-roasted coffee, whilst the other parts of the house were permanently cleared of the same smell by being simply traversed with the coffee-roaster, although the cleansing of the dung-pit continued for several hours after. Even the smell of musk or castoreum, which cannot be overpowered by any other substance, is completely dispelled by the fumes of coffee; and the same applies to the odors of assafœdita. It was remarked, however, that in general animal effluvia are more readily affected by it than vegetable. That here an acidal neutralization and not mere envelopment of matter, takes place, is shown from this, that the first fumes of the coffee are imperceptible, and continue so until a point of saturation, so to speak, is reached whereupon the obnoxious smell disappears and that of the coffee predominates. The reverse happens with other aromatic vapors; and even with acetic acid and chlorine. Here both co-exist until the one completely preponderates. The simplest form in which to use it against contagious matter is in powder. The well-dried raw bean is to be pounded in a mortar, and to be strewed over a moderately heated iron plate until the powder assumes a dark brown tint. Coffeic acid and the empyreumatic coffee oil, act more readily in a very minute quantity.

Saltness of Sea-Water.

In the Northern and Arctic Seas the specific gravity of the water has been found by Dr. Marcet, Mr. Scoresby, and Dr. Fife, 1026.7, and nearly the same at all depths. Under the equator, 1028. In the Mediterranean, 1028. 82, showing this sea to be considerably salter than that of the oceans which surround the globe. But the saltest, at least the heaviest, of all the waters on the earth, is the Dead Sea, which is impregnated not only with salt but also with sulphurous and bituminous ingredients. The specific gravity has been found to be 1211, showing an impregnation eight times greater than sea-water.

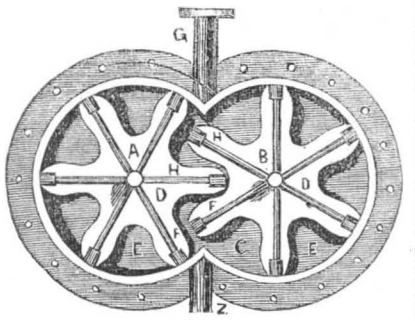
Fence for the Prairies.

A new kind of fence is coming into use in Northern Illinois. The fence consists of strips of sheet iron, one and a half inches wide, prepared in oil, so as to resist the action of the weather, and painted white. These strips are nailed to posts in the ground, two rods apart, with a perpendicular strip of board every other rod. The whole cost per rod is estimated at less than thirty cents; and it is superior to wire, as it does not sag, and being painted white, cattle will see it and not run against it.

History of the Rotary Engine.

Prepared expressly for the Scientific American.

Fig. 21.



MURDOCK'S ROTARY ENGINE.

This is a rotary engine invented and patented in 1799 by W. Murdock of Redruth, Wales. The invention consists in having two toothed wheels working into one another and fitted into a double case resembling two cylinders, with a segment cut off each.

A B, are the two axes upon which the wheels D D are fixed. The teeth are supposed to be packed at the parts in contact with the exterior cylinder. The teeth which are in contact are so fitted as to prevent any escape in that direction. Steam being introduced at the pipe Z, a rotative motion would be produced; but the construction would be so defective, and the friction so great, as totally to prevent its ever answering in practice. At the same time we ought to correct an erroneous opinion which many have formed respecting this machine, which is, that it would not move at all; it being thought that as the surface of the teeth H H, are as great as that of F F, that there would be as great a tendency to turn one way as another, and therefore no motion would be produced. But it will be seen that the teeth H H, though individually of equal superficies with F F, overlap each other. the surface presented to the action of the steam is only equal to one tooth, therefore the effect of the steam (without calculating friction) would be one half the real force.

This rotative engine of Mr. Murdock was never of any use whatever, although as a toy it is a very beautiful machine. The inventor was a very ingenious man and although not successful in this invention, yet he has claims to originality. We have presented no similar rotary to this before. Mr. Murdock made an improvement in the casting of James Watt's Steam Jacket. He cast it in one piece with the cylinder, with a space between the two, but connected at both ends.

The Consant Presence of Metals in the Blood.

M. Millon, through the (Paris) Comptes Rendus, remarks: The blood is received, for the sake of experiment, in a vessel containing about three volumes of water to one of blood, and introduced into a flask containing chlorine. The organic matter immediately coagulates, changes color and loses all traces of organization. By expressing the clot and washing, the whole inorganic matter is removed and is found in the clear and limpid solution. Not more than one per cent of organic matter is carried off in solution. The reaction with chlorine is complete in two or three minutes, the separation of the iron in this way is therefore a neat experiment.

The saline ingredients after ignition are examined as usual, and of this residue, 100 parts are found to contain—

Silica : : : : :	1 to 3	Copper : : :	1·5 to 2·5
Lead : : : : : :	1 to 5	Magnesia :	20· to 24·

This experiment shows that these metals, like iron, are found only in the globules of the blood. This method of analysis is suggested as suitable for the fluids of the animal economy: it is fully determined that the most repulsive matters furnish immediately a clear saline solution.

This is something new in organic chemistry, and must be received with some caution It may yet be discovered that the lead is no *lead*, and the copper, no copper.

Lithographic Limestone.

Papers from India, says the London Athenæum, notice the discovery in the Deccan, of a bed of lithographic limestone, of great extent and excellent quality.

Diseases and Cures of Grape Vines.

In some sections of country mildew is the greatest enemy to the vine. The mildew may be arrested by applying directly to the roots of the vine either leached or unleached ashes, or any thing else of an alkaline nature.

Rose Bugs are sometimes very destructive to vines, eating all the leaves and nearly destroying the entire crop of grapes. The best remedy is whale oil soap. Take four pounds of the soap and dissolve it in four gallons of water; strain it and add enough cold water to make one barrel of suds. If only a few vines are affected, the suds may be applied with a syringe, but if there is a large number of vines apply it with a garden engine.

We have seen the soap suds used with great effect. They should never be applied warm, but cold. Soapsuds applied to water the vine is most excellent—nothing better. It is both meat and drink to the ruby grape. But care should be taken never to apply them warm. We once saw a good vine destroyed by hot soapsuds. Sheet lead should never be used to fasten up vines, altho' we have seen it used for that purpose more than once. In moist weather, and especially through the influence of dew, the oxide of lead is liable to run down and enter the earth and then is taken up by the mouths of the vine, becoming a poisonous part and parcel of the fruit.

Beautiful Action of the Sun.

The illuminating influence of the sun is displayed in a remarkable degree by the plant *calcalia ficoides;* its leaves combine with the oxygen of the atmosphere during the night, and are as sour as sorrel in the morning; as the sun rises, they gradually lose their oxygen and are tasteless by noon; and by the continued action of the light, they lose more and more, till towards evening they become bitter.

Vast Irrigation.

There are works for this purpose in India, tanks and aqueducts of immense magnitude, miles in circumference and length, which excite the wonder of the passing traveller, and are, in the labor expended on them, little inferior to the Pyramids of Egypt themselves.—It has been imagined they were erected for hydraulic purposes.

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